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| 10/562,409 | 09/08/2006 | Michiel Arjaan Kousemaker | KOUSEMAKER ET AL-IPCT | 6090 |
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| COLLARD & ROE, P.C. 1077 NORTHERN BOULEVARD ROSLYN, NY 11576 | | | PO, MING CHEUNG | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Response to Amendment

1. This is the response to amendment filed 12/11/2009 for application 10/562409.
2. Claims 1, 3-14 are pending and have been fully considered.
3. The 35 U.S.C. 112 rejections of claims 10 and 13 have been withdrawn in light of applicant's amendments.
4. The 35 USC 101 rejection of claim 13 has been withdrawn in light of applicant's amendment.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 5-7 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
7. Claims 5-7 describe that "the alcohol, aldehyde, ketone, and tertiary olefin are selected in such a way" to impart certain properties to the resultant formed oxygen containing compound. It is unclear what "such a way" is. There is no guidance how one of ordinary skill in the art would be able to tell which compounds when reacted together would form a compound with these certain properties.

Claim Rejections - 35 USC § 103

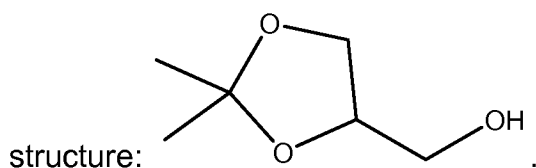
8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, 3-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over WESSENDORF (EP 0718270 A2).

There is no English equivalent for WESSENDORF. However, a machine translation has been attached.

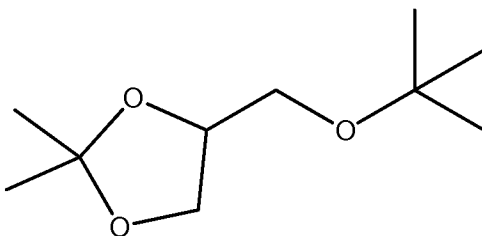
Regarding claims 1 – 4, 8 – 9, 11 and 12, WESSENDORF teaches in example 4 a reaction with **glycerin**, **acetone** and **i-butene**. WESSENDORF further teaches in lines 1- 10 of page 7, 2,2-dimethyl-4-hydroxymethyl-1,3-dioxolan with the following



WESSENDORF does not seem to explicitly teach etherification of the still free hydroxyl groups of the acetal produced.

However, it would be obvious to one of ordinary skill in the art that the 2,2-dimethyl-4-hydroxymethyl-1,3-dioxolan would react with the i-butene to form ethers.

WESSENDORF teaches 2,2-dimethyl-4-tert-butoxymethyl-1,3-dioxolan, which



has the following structure:

. 2,2 dimethyl-4-tert-

butoxymethyl-1,3-dioxolane has its only hydroxyl group etherified.

Therefore the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

WESSENDORF further states that the compound produced may be added to gasoline in the 6th paragraph of page 2 of the translation.

Regarding claims 5 – 7, WESSENDORF does not seem to explicitly state how the alcohol, aldehyde, ketone, and tertiary olefin are selected such that the compound dissolves completely in fuel, such that it does not exert a negative influence on the flash point and that it does not increase the water solubility of fuel that it is added to.

However, since the alcohol, aldehyde, ketone must inherently be able to be selected in a way to grant the resultant compound such properties.

It would be obvious to one of ordinary skill in the art to select such a way in order to grant these beneficial properties to the compound that WESSENDORF forms. In the alternative, WESSENDORF teaches specific compounds that are presently claimed such as acetone and i-butene.

Examiner is taking the position that the glycerin, acetone, and i-butene that WESSENDORF teaches produces a oxygen-containing compound that dissolves completely in fuel, does not exert a negative influence on the flash point of the fuel and does not increase the water solubility of the fuel.

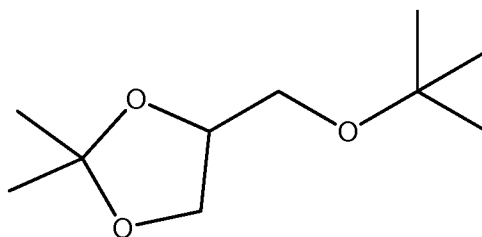
Regarding claim 10, WESSENDORF does not seem to explicitly state that the oxygen-containing compound is 95% pure .

However, it would be a matter of obvious skill in the art to purify the product to 95% by separating other compounds.

Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Regarding claim 12, the chemical structure of **2,2-dimethyl-4-hydroxymethyl-**

1,3 dioxolan-tert butylether is



, which is also

called **2,2 dimethyl-4-tert-butoxymethyl-1,3-dioxolane**.

Regarding claim 13 and 14, WESSENDORF does not seem to explicitly state the use of the compound as an additive in fuels in an amount from 0.1 – 30 % by volume. However, WESSENDORF does teach that the compound may be used in fuels such as gasoline.

It would be obvious to one of ordinary skill in the art since it has been held that where the general conditions of a claim are known, optimization or workable ranges involves only routine skill in the art.

Response to Arguments

10. Applicant's arguments filed 12/11/2009 have been fully considered but they are not persuasive.

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Applicant argues that the claims 5-7 are enabling for one of ordinary skill in the art. Applicant points to pages 6-8 of the specification as support for dissolubility being an important characteristic for an additive in fuel. However, the issue is not whether dissolubility is important for an additive in fuel. The issue is that there is no disclosure teaching how it is possible for one of ordinary skill in the art to select alcohol, aldehyde, ketone, and tertiary olefins in such a way that one of ordinary skill in the art could foresee the properties that the resultant compound would have. There are no steps in the process claim but only the general result in the claim.

Applicant argues that the process presently claimed is different from the process that is taught by WESSENDORF. WESSENDORF teaches 2,2-dimethyl-4-tert-butoxymethyl-1,3-dioxolan which is 2,2-dimethyl-4-hydroxymethyl-1,3-dioxolan after it has its own hydroxyl group etherified by i-butene. Applicant argues that the process and resultant product is different from the presently claimed invention because the acetone and i-butene are present at the same time with the glycerin and compete for reaction instead of allowing the acetone to form an acetal first and then allowing the i-butene to etherify the hydroxyl groups. Applicant argues that the process that the applicant is claiming would yield a purity of 95% instead of the 30.3% that WESSENDORF teaches. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., 95% purity) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988

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F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). A purity of 95% is only referenced in claim 12. WESSENDORF does not teach which compound reacts with glycerin first but there is no reason to believe that the pathway only produces the product via etherification and then acetalization especially because of the presence of 2,2-dimethyl-4-tert-butoxymethyl-1,3-dioxolan which has been acetalized but not etherified. In the case of purity, it would be obvious to one of ordinary skill in the art to purify a compound to more than 95% pure by separating out other compounds.

Applicant's arguments, see pages 7-8, filed 12/11/2009, with respect to GERMANAUD have been fully considered and are persuasive. The 35 U.S.C.103(a) rejections of claims 8-14 has been withdrawn.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

DELFORT (US 6,890,364) teaches a diesel fuel compound that has major proportion of at least one diesel fuel and a minor proportion of at least one glycerol acetal. DELFORT also teaches that the free hydroxyl group of the acetal may be substituted with an ether. DELFORT does not appear to teach reacting the acetal with an olefin to form an ether.

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MING CHEUNG PO whose telephone number is (571)270-5552. The examiner can normally be reached on 9:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571)272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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/Ming Cheung Po/
Patent Examiner

/Ellen M McAvoy/
Primary Examiner, Art Unit 1797